

ABSTRACT OF THE DISCLOSURE

A method of manufacturing a semiconductor device using a gallium nitride related semiconductor is provided. The method include a step of preparing a substrate whose surface is formed by a gallium nitride related semiconductor; a nitriding step of contacting the surface with atom-state nitrogen which is obtained by decomposing nitrogen-containing gas by means of a catalytic reaction, to thereby nitride the surface; and an electrode forming step of forming, on the surface, a gate electrode and source and drain electrodes opposing each other through the gate electrode.